The DRILLER

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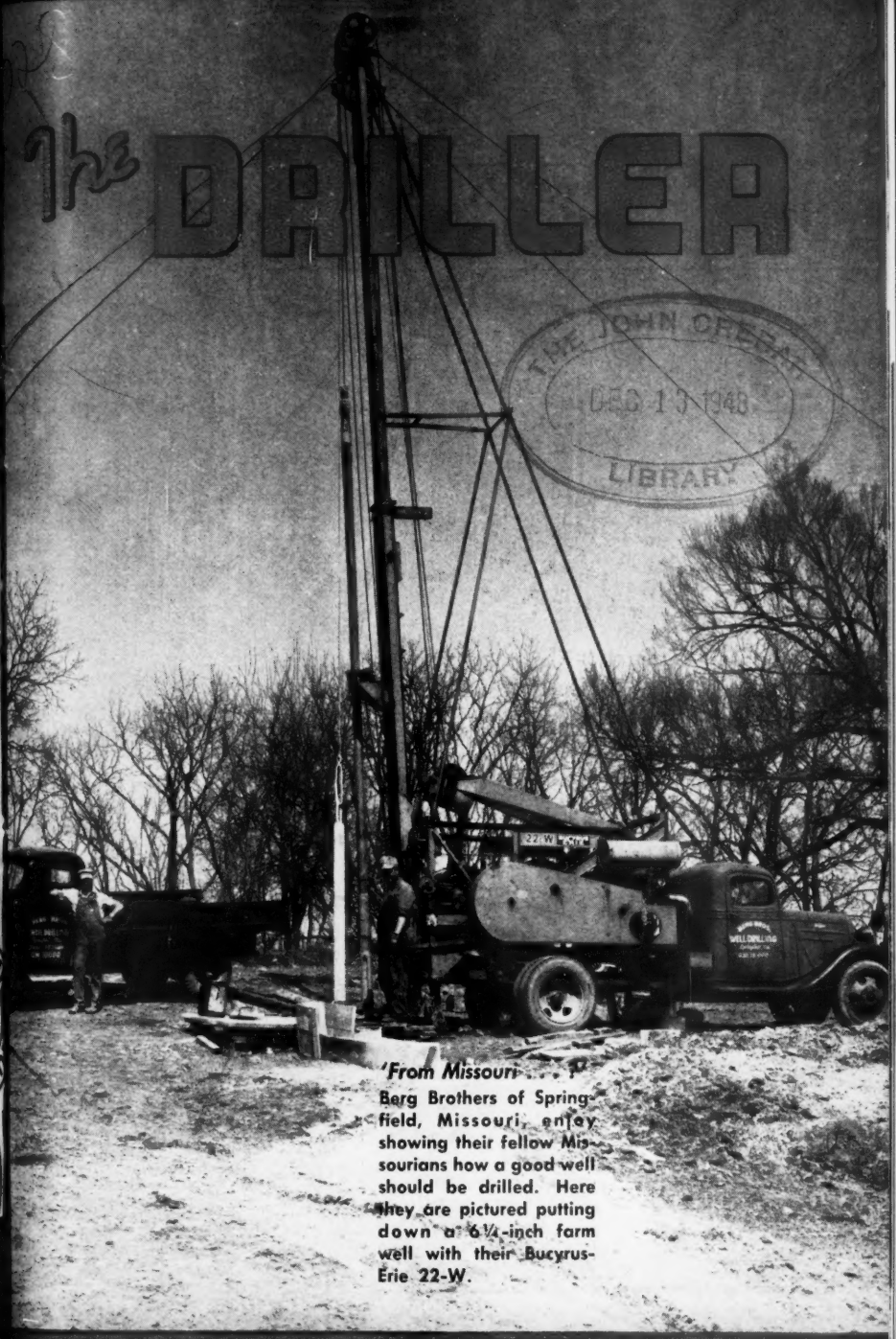

'From Missouri . . .' Berg Brothers of Springfield, Missouri, enjoy showing their fellow Missourians how a good well should be drilled. Here they are pictured putting down a 6¼-inch farm well with their Bucyrus-Erie 22-W.

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VOLUME 22 DECEMBER, 1948 NUMBER 12

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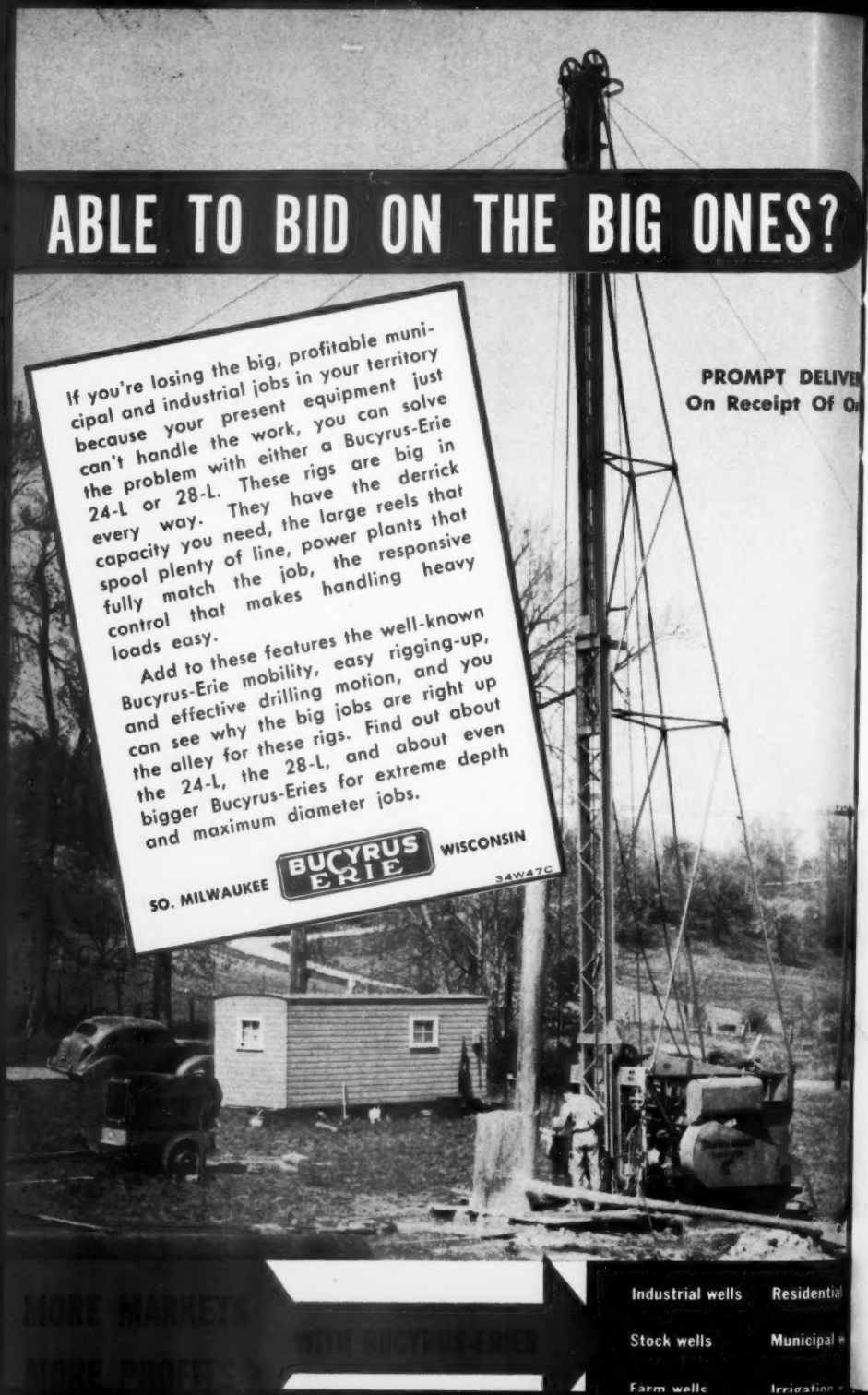
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Add to these features the well-known Bucyrus-Erie mobility, easy rigging-up, and effective drilling motion, and you can see why the big jobs are right up the alley for these rigs. Find out about the 24-L, the 28-L, and about even bigger Bucyrus-Eries for extreme depth and maximum diameter jobs.
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PEERLESS Vertical Turbine PUMPS

PEERLESS Builds a Pump to Suit Your Service—Capacities: 15 to 30,000 G.P.M.

PEERLESS VERTICAL TURBINE PUMPS FOR DEEP WELL SERVICE

For development of a reliable, permanent water supply, install these deep well pumps with the type of drive most suitable to your application. You have a choice of electric, right angle gear drive, or belted (V- or flat) heads as well as the option of oil or water lubrication. Capacities from 15 to 30,000 g.p.m. are obtained from depths of 1000 feet or more. *Fully described in Peerless Bulletin B-141-1.*

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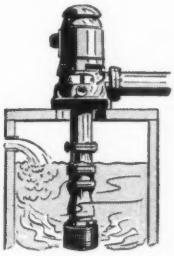
For pumping from short settings such as pits, sumps and surface water sources, such as lakes, rivers and ponds, get the full utility and capacity of a deep well pump with a close-coupled Peerless Vertical Turbine Pump. Makes an extremely compact installation. Uses include cooling tower service, boosting, recirculation and dewatering. Capacities: up to 30,000 g.p.m. *Fully described in Bulletin B-159.*



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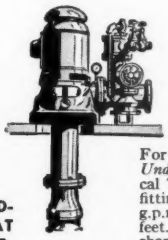

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For adequate fire protection, the *Underwriters' approved* Peerless Vertical Turbine Fire Pump, with proper fittings, produces from 500 to 2000 g.p.m. against heads from 240 to 285 feet. Built for instant operation. Discharge piping is simplified. Choice of drives and oil or water lubrication. *Fully described in Bulletin B-152.*

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fmc PEERLESS PUMPS

Solving Toug Pr Boosts Lon sl

Starting some 30 years ago with a "piece of pipe and a wrench," C. W. Lauman & Company, Inc., Hicksville Road, Bethpage, Long Island, by dint of hard-hitting, practical business methods has grown into one of the outstanding water supply corporations in the East.

WHETHER it's providing a swimming pool for an individual, an air-conditioning well for a large corporation, or a water system for an entire island, C. W. Lauman & Co., Inc., Bethpage, Long Island, will handle the job in stride. For some thirty years the Lauman drillers have been solving the various water problems of hundreds of customers in an efficient way that has enhanced the firm's reputation along the entire Eastern Seaboard.

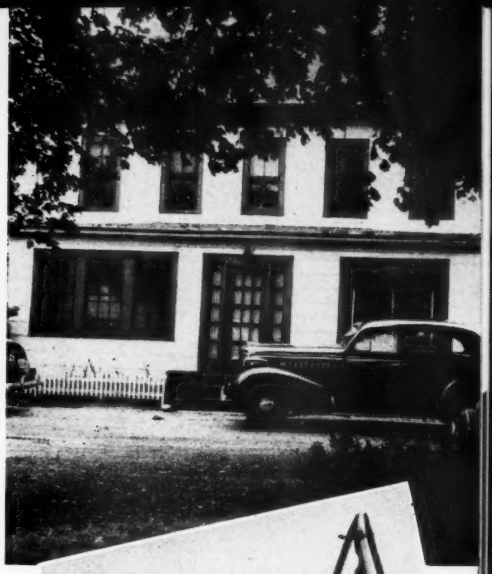
Started by C. W. Lauman with a "piece of pipe and a wrench" in 1917, the firm has blossomed into one of the largest well drilling corporations in the East. Since the founder's passing, his brother Harmon E. Lauman, has headed the organization and has been primarily responsible for the firm's expansion in latter years. At present, Lauman has five Bucyrus-Erie rigs—two 22-

• A "whopper" put down for municipal water supply in Cape Cod, Massachusetts, by Lauman drillers is shown in the process of being cased. The well, 85 feet deep, took 52-inch casing.

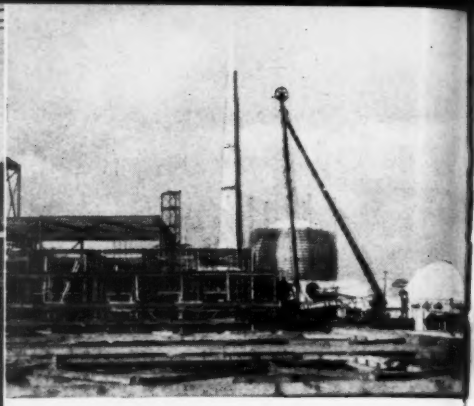
Problems on Island Firm

W's, a 24-W, a 33-W, and a 24-L—two KD-50 Keystones, five 271 Stars, and a Failing rotary rig. All rigs are truck mounted, with the exception of the 24-L.

The thirty trucks which the company uses in servicing work range from pick-ups to five-ton trucks. Other equipment includes two portable electric welders, four portable air-compressors, six centrifugal pumps, and a number of portable generators. With this variety of equipment available at all times, the company can install a complete



• (Top Photo) The attractive office front of C. W. Lauman Company greets visitors when they call on the firm's Long Island plant. (Right) Lauman drillers jet down a salt water well for a swimming pool during low tide on the South Hampton, L. I., beach. (Below) C. Sauer and Corbitt Asworth are shown putting down a 12-inch well for the MacArthur Air Field near Sayville, L. I. This well, a 750 Gpm. producer, was one of a battery drilled to provide water for a storage reservoir connected to the fire protection system.



• (Above) The derrick of a Lauman rig towers into the air midst the spires of modernistic buildings being constructed in 1939 for the New York World's Fair. The well was drilled for the Japanese exhibit. (Upper Left) A 15,000-gallon tank is being installed under a pump-house in Levittown, L. I., where it will store water from an 800 Gpm. well drilled by Lauman. (Left Center) The hustle and bustle of activity outside the Lauman shops can be seen here.

water system from the drilled well to construction of a pump house and installation of distributing pipe.

The entire Atlantic seaboard—from Florida to Maine—provides the working territory for the Long Island firm. Lauman drillers also have handled jobs on the islands of Bermuda and Aruba, the latter island lying off the coast of Venezuela. Work in Bermuda was still being carried on at the time of the interview, one of the Lauman engineers being on the island supervising the revamping of its water works. Because Bermuda's fresh water lies in a coarse limestone seam near the top of the earth, a system of horizontal

• Nothing appears unusual about this picture until you learn that in order to drill a diffuser well in the center of the building "square," the rig had to be dismantled in front of the building, hauled across the roof, and then reassembled. The same method was employed to remove the rig. Jamaica, L. I., was the scene of this odd job.

tile pipe was being installed, under the company's direction. This narrow channel of ground water provides the island's only fresh water supply; consequently, much time was spent in preparing plans for the system. Work on the project has been carried on since October, 1947.

Variety of Jobs

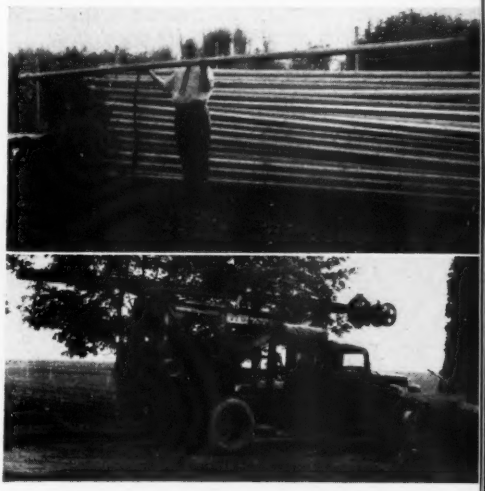
The variety of Lauman jobs is as big as their territory. You name your type of job and there's a good possibility that one of the Lauman drillers has handled a job of similar nature. But don't get the idea that this organization is a jack-of-all-trades and master of none. The firm considers itself a specialist in the installation of irrigation systems on the many farms that dot Long Island. Besides drilling the well and installing the pump, the company will lay out a portable aluminum irrigation system or an overhead steel irrigation system of their own design. Many of the larger truck and potato farmers have come to look to the Lauman organization for the final word on irrigation subjects.

The majority of such wells put down on Long Island are natural gravel filter wells that must be cased the entire depth of the hole. These wells are drilled through a top-glacial formation of Magothy sand and a Lloyds gravel formation. An irrigation well in this area usually varies from 50 to 1000 feet in depth, depending upon the size of the hole and the amount of water desired. Whenever boulders are encountered in drilling, Lauman drillers wash the sand away from the boulder until it falls into the hole and can be ground up.

Golf course irrigation is another winning card in the Lauman hand. For municipal courses, the firm has provided water for the irrigation system; for private courses, they have not only provided the water but engineered the distribution of the water mains on the courses.

Other wells which the Long Island firm have put down include air-conditioning wells for theaters, banks, industrial plants, and municipal wells of all types. Because of Long Island laws, water used for air-conditioning purposes must be returned into the ground. (The state law in regard to the returning of water to the ground is: Any water supply greater than 100,000 gallons per day, with the exception of irrigation or fire wells, must be returned into the ground.) Wells drilled for the returning of this water are called diffuser wells. Many times these wells become clogged because of the action of the mineral contents in the

(Continued on page 22)



• (Above) Harry C. Spielman, Assistant Treasurer, is shown holding a length of aluminum pipe. The company has used this type pipe very successfully on many jobs. (Below) One of the Lauman rigs, a Bucyrus-Erie 22-W, has been checked and is ready for action.

Well Troubles Explained

Readers will find this driller's recounting of his experiences with pump problems both interesting and highly informative.

By W. B. Kennedy

"WHAT causes my well to stir up every time I pump a little more water than usual?" a farmer asked me recently.

"There can be several different causes for the stirring up, most of which are remediable," I replied.

"Most of the time the water is clear enough, but occasionally it stirs up, turns brownish red, and has to be filtered, or treated with lime, before it is fit for drinking or washing purposes. My wife is raising Cain—what can be done to stop this trouble?"

"It may take several experiments to determine just what is the cause of your trouble," was my reply.

"Well, bring your rig to my place and see if you can help me; I've got to have water or move! If you think I must have a strainer, or something special, write a list of things for me to buy, so I'll be ready for you when you arrive," he requested.

"I have no way of knowing what we will need until I have examined the well thoroughly. I must examine the pump, particularly the foot valve. If the valve doesn't seat properly, it may cause the pump to become unprimed, allowing the water to flow back into the well and stir up any sediment resting on the bottom. It even may be necessary to pull the casing if it is old and rusted through," I said.

"It's an old well, all right," he concluded.

When I arrived with my rig I proceeded step by step, as follows, in an effort to determine the exact cause of his trouble:

First I examined the pump and found nothing wrong with the foot valve; it was seated perfectly and the pump stood primed under ordinary conditions, although when the pump was operating, the water would stir up, discolor, and bring up enough sand and other slushy matter to cause poor seating of the valve.

Then I pulled the pump pipe and "drilled" out the loose sand with which the hole was almost filled, thinking that a more abundant reserve would eliminate the down-flow and the possible stirring-up when water is pumped faster than it accumulates in the well. It seems

• **Sometimes there may be a leak in the well casing.**

reasonable to suppose that a hole filled with loose sand is slower in accumulating water than one which is free of objectionable matter. It is my belief that down-flow causes the stirring up of water rather than the normal in-flow. Downflow, as well as close proximity of the foot valve to slush, must be avoided to prevent stirring up. The only way to avoid down-flow is to provide a reserve by good depth and free horizontal in-flow.

Water Fails to Clear

After putting the pump back in the well, I started pumping water to determine if the problem had been solved; but the water still refused to clear up. What was I to do next? Try a strainer? Not if I could avoid it. I asked the owner if he remembered what type of earth the lower end of the casing was set in. He said he thought it was set in blue earth (gumbo, he thought) a foot or two below a pool of clay-colored slush struck in the first vein of water. I got an idea from this, because the clay color matched the color of the slush that was coloring the water. Evidently, I thought, the slush was coming from around the casing instead of below it, because only sand and blue earth were drilled out of the well (originally) after setting the casing, according to the owner. I decided to pull out the casing, but found this impossible because of the inadequate hoisting equipment I had on the site at the time. It seemed advisable to drill a new well, but the owner objected to moving his well, because the location was ideal, and insisted on a repair job if possible.

Finally, I resorted to the following method of pulling the casing, finding it successful in the absence of proper equipment. A large chain was looped around the casing near the ground, the loose end being securely fastened near the center of a long, large piece of timber. A heavy jack was placed under either end of the timber. Proper manipulation of the jacks applied so much pressure that the casing was pulled loose from its solid setting. I found the casing had rusted through at the point where it stood in the clay-colored slush located near the surface level of the first vein of water. This leak accounted for the stirring

(Continued on page 20)

• **Inspect the pump thoroughly.**

The DRILLER

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Conservationists Agree To Support Texas Water Code

A COMPROMISE proposal for enactment of an underground water control and conservation code in Texas was unanimously supported, according to reports, at the two-day fourth annual convention of the Texas Water Conservation Association, which concluded October 8 in Austin. After years of previous controversy, opposing factions reached agreement in the closing hours of the convention on proposals submitted by delegates from the Texas High Plains area. Earlier expectations of bitter floor debate failed to materialize as complete accord was reached on the compromise proposal, under which local water districts would be established and controlled by the votes of qualified voters living within them.

To be submitted to the 1949 Legislature, the proposed underground water code would give complete local option control of water wells, with each district electing its own directors and having authority to issue bonds and levy taxes for water conservation. Under the measure, the districts could prohibit waste of water and pollution of wells and adopt rules governing the withdrawal of water, well drilling and recharging practices. Water wells of not more than 30,000 gallons a day output would be exempted from the proposed law.

To Debate Question

The association placed further debate on Texas water supply problems in the hands of the Interscholastic League. Rodney Kidd, director of the league, offered to include the subject for high school debaters in the 1949-50 school year. The offer was quickly accepted.

In other actions, the association reaffirmed its opposition to federal valley authorities "whether established by Congressional act or by executive order," but urged Congress to appropriate adequate funds for construction of flood control, reclamation and multiple-purpose projects "having sound economic justification."

The group urged adequate funds for the U. S. Geological Survey and opposed construction of any further projects on the Pecos River until a compact between Texas and New Mexico has been ratified. Another resolution urged Congress to support the state's tideland position, while state officials were congratulated for

(Continued on page 20)

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Bucyrus-Erie drilling and fishing tools give you more efficient, more economical service because they are —

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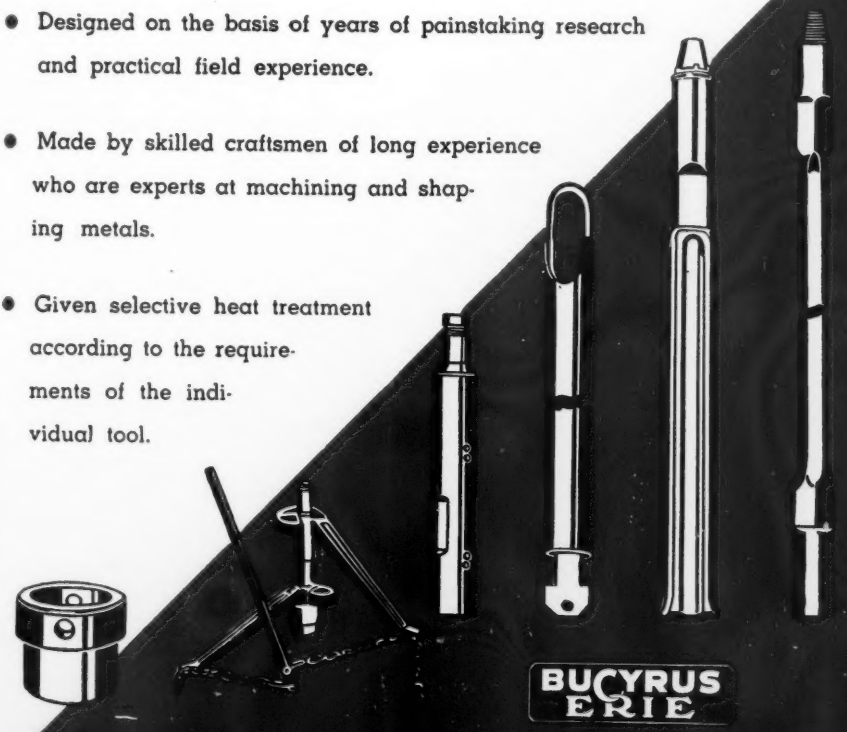

Send for free catalog and price list and the next time you need drill bits, drilling jars, boilers, rope sockets, or other tools — try Bucyrus-Erie.

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NEWS OF THE MONTH

Colorado Group To Meet Dec. 3-4

ANNOUNCEMENT has been made that the Colorado Water Well Drillers Association will hold their convention in the Shirley Savoy Hotel, Denver, December 3 and 4. All Colorado drillers are invited to attend the meeting.

Kansas Convention Draws Big Turnout

NUMBERING over 70 persons, an interested group of drillers, manufacturers' representatives, and geologists attended the first annual meeting of the Kansas Water Well Driller's Association held in the Hotel Kansan, Topeka, Kansas, October 29 and 30.

After being welcomed by the mayor, the association heard G. F. Briggs, E. E. Johnson, Inc., speak on "The Future of the Drilling Industry," and Kenneth Willey, Wilson & Co., deliver a talk on the "Relation of the Driller to the Engineer." A major part of the afternoon was spent visiting the various exhibits and witnessing bit dressing and rotary drilling demonstrations. A short business session preceded the banquet which featured motion picture entertainment.

Following talks by Dr. J. M. Jewett, State Geological Survey, "Ground Water in the Rocks of Eastern Kansas," and R. R. Storm, Illinois Geological Survey, "Need for a National Association," the election of officers was held. Named to office were: E. J. Jungman, Topeka, President; W. L. Hendee, Sr., Muncie, Vice-president; L. B. Soldan, Salina, Secretary-treasurer, and Hazen Sears, Paola; Kermit Oursler, Burns; L. H. Martin, Larned; C. A. Burrows, Holyrod; Directors.

Dodge City was selected as the site of the next convention to be held October 14 and 15, 1949.

California Ass'n. Holds Meeting

THE Water Well Drillers Association of Southern California held their annual meeting at McDonnell's Monterey, Los Angeles, Calif., on October 2. After the noon luncheon, which was accompanied with musical entertainment, an informal business session was held. Included on the program were the introduction of guests, discussions on topics pertaining to the well drilling industry, and talks by drillers and manufacturers' representatives. Highlighting the day's activities was the drawing held for two door prizes which were donated by Drilling & Mining Equipment Company.

Pump School Features Program Of Nodak Drillers

THE three-day annual convention of the North Dakota Well Drillers' Association, held November 4-6 in the Patterson Hotel, Bismarck, N. D., concluded with the re-election of three of the association officers. Returned to office were: Al Jaeger, Mooreton, President; Fred J. Simpson, Bisbee, Vice-President, and Fred V. Sletvold, Secretary-treasurer. Paul

Jaszkowiak, Bismarck, was selected as Director for a three-year period.

A school on "Basic Hydraulic Principles Applying to Pumps," presented by R. A. Ahlgren, Deming Co., highlighted the first day's activities. Speakers and their topics for the following day were as follows: Dr. W. M. Laird, University of North Dakota, "Activities of the Ground Water Program in North Dakota During the Past Year"; William Gahr, State Health Department, "Rural Water Supplies"; Dr. A. M. Sayre, U. S. Geological Survey, "The Role of Ground Water in the National Economy," and E. W. Bennison, E. E. Johnson, Inc., "The Heart of a Well is the Screen."

New Wells Slated For Florida City

A NEW well field and treatment plant is being planned for the Miami, Florida, water department at a cost estimated at $9,000,000, Director W. A. Glass reported.

Now in the design stage, the plant and well field will be located south of the county stockade. "Our plant at Hialeah has reached maximum output," Glass explained, "and the water board decided, therefore, to plan a complete new well field and treatment plant in the southwest area." Financing will be handled through the issuance of revenue bonds, although it was thought that it might be two or three years before work will begin on the plant.

The first step in the development will be the drilling of four wells at the site of the proposed treatment plant. Bids for the drilling of these wells, which will be tied in with the present water distribution system, have already been solicited. These four wells, to be approximately 100 feet deep, will probably be abandoned after the new well field is developed.

Utah Appropriates Money For Project

A new state appropriation of at least $1,000,000 for Utah water conservation projects during the next biennium has been recommended (Oct. 8) by the Utah Legislative Council's subcommittee on irrigation and water power, according to reports.

In making the recommendation, David K. Holther of Ogden, chairman of the subcommittee, expressed satisfaction with the work of the Utah Water and Power Board created by the 1947 State Legislature.

The Utah Legislature last year created the board and appropriated $1,000,000 for a conservation revolving fund and $200,000 for engineering and administration purposes. Thus far the board has contracted or allocated $702,000 of its original appropriation. The allocations are repayable on a 20-year interest basis.

Water Resolution Tabled By Bar

PROPOSED legislation for the regulation of rights to underground waters in Colorado was tabled (Oct. 16) by the Colorado Bar Association during its fiftieth annual meeting in Colorado Springs.

A. W. McHendrie of Pueblo, Chairman of a committee to draft a bill regulating the rights to underground waters in the state, reported a wide disagreement among the state's lawyers and water users.

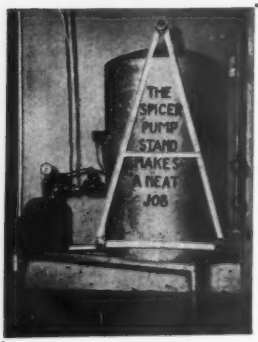
"The majority of persons interested in irrigation are not in favor of any legislation," he said. "And those in favor of some form of legislation have a wide diversity of opinion."

Peerless Consolidates At New Plant Site

THE consolidation of the movement of both personnel and equipment into its new 19-acre plant site at Indianapolis, Indiana, has been completed by Peerless Pump Division of the Food Machinery Corporation, according to F. E. Fairman, Jr., Vice President of the Food Machinery Corporation and General Manager of its Peerless Pump Division.

Located approximately two miles from the heart of downtown Indianapolis at 2005 Northwestern Avenue, the new plant will ultimately offer employment to approximately 800 persons.

Works manager of the Peerless Indianapolis plant is H. J. McKenzie; Assistant works manager is C. N. Adams. The plant is said to be producing units of the complete line of Peerless pumps, vertical, horizontal, centrifugal and domestic water systems. Other departments now located at the plant include the centrifugal sales section and the small products sales section, plus a complete designing and engineering staff, supplemented by accounting and credit personnel.



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Myers Holds Annual Sales Conference For Field Men To Discuss Problems

SALES Personnel, District Managers and Field Representatives of The F. E. Myers & Bro. Co., met at the home office in Ashland, Ohio, for the Annual Sales Conference, during the week of September 24 to October 2, 1948.

Forums, led and directed by various field representatives, consisted of some 60 key men from Engineering, Production, Purchasing, Advertising, Promotion, Accounting, Order Handling and other departments. District Managers and Field Representatives pooled questions which are often asked in their work with dealers and distributors. These questions were then discussed in the various forms.

New catalogs covering Myers complete line of Water Systems, Pumps, Sprayers and Hay Tools, were presented to the representatives at the conference. These and new repair parts catalogs are now being distributed to the trade.

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Jensen's 25DC is a mighty spunky water pumper

Yes sir, that little model 25 DC Jensen is as spunky a little pumpin' jack as you've ever seen. Naturally being made by the Jensen folks — it's up to snuff and modern in every way — like this television. Back of every Jensen Pumpin' Jack is more than 29 years of experience in making high quality pumpin' equipment which is your assurance of years of dependable pumpin' performance.

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Empire State Holds Meeting

A QUARTERLY meeting of the Empire State Water Well Drillers' Association was held at Binghamton, New York, October 13. Reports were read concerning business conducted at the annual convention, and Ray Knapp, Lancaster, gave a resume of the North Carolina association's convention which he attended. Other business included the enrolling of new members and the decision to send a representative to Chicago to attend a meeting of the Temporary National Water Well Drillers' Association. The second week in January was selected as the time of the Empire association's next meeting, at which time officers will be elected for the ensuing year.

Downward Trend Of Water Levels Noted By Report

THE downward trend of groundwater levels continued in the West and Southwest during the month of September, according to the monthly water report issued by the U. S. Geological Survey. Levels in the main coastal plain in Los Angeles and Orange Counties, Calif., were reported 7.6 feet lower than in September of 1947 and 2.4 feet lower than during the low water period of 1936, based on the records of nine wells.

With the exception of moderate rises in water levels in the Pima and Santa Cruz County portion of the Santa Cruz River Basin, owing to decreased pumping, Arizona levels continued their downward trend to stages progressively below those of previous years. New Mexican water levels in areas where ground water

is used for irrigation declined during the month to the lowest levels for the year.

In the Midwest, ground-water levels were generally low. Indiana levels continued to decline in shallow observation wells, although in areas where underground water is used for cooling purposes, a rise was noted.

New England levels were also reported low, with Vermont and New Hampshire suffering particularly low stages during the month.

Wells Drilled To Provide Means Of Draining Land

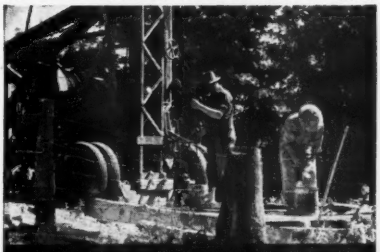
AN interesting experiment is being carried on in Fort Lauderdale, Florida, where a drainage well is being drilled to determine whether wells are practical to speed the runoff of water from a flooded area in the city. News reports indicate that C. B. Maxon, Oakland Park driller, has moved on location and has started putting down an eight-inch well for this purpose.

City officials ordered the well drilled despite adverse recommendations from the U. S. Geological Survey whose findings apparently disclosed that drainage wells to underground salt water streams are impractical in the area. City Engineer Patterson said that when the well is completed an eight-inch pump will be installed to force the surface water into the hole should the water not drain into the well by means of gravity. Should the well operate successfully by gravity flow, more wells will be drilled immediately, Patterson said, although it is possible that other wells with pumps may be used in the area if gravity system drainage doesn't prove practical after being tried.

For efficient and economical DRILLING

Macwhyte Hi-Lastic's "built-in" elasticity allows tools to strike sharp, hard blows. It keeps the bit turning better . . . reduces tendency for the hole to get out of round, and for the bit to channel. Like all Macwhyte Wire Lines, Macwhyte "Hi-Lastic" Line is internally lubricated. Circular lists and describes all Macwhyte Cable Tool Drilling and Sand Lines.

Ask for Circular No. 47-21. NO. 939



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MACWHYTE COMPANY

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Importance Of Noting Contract Wording

A DECISION of the Arkansas Supreme Court illustrates the importance of careful wording of well drilling contracts. A contract provided for a well to be drilled to the depth desired by the landowner at a footage price — $2.50 per foot for the first 100 feet and $2 for every foot below that. Then followed this clause that gave the court a "headache": The owner agrees to pay the contractor "one-third of the price herein agreed upon per foot . . . when 100 ft. is drilled, the balance to be due and payable as soon as said well has been drilled and a satisfactory test of same has been made." The owner made partial payments at 100 feet, 200 feet, and 300 feet, but at 404 feet refused to pay anything more until the well was completed and a satisfactory test made. The contractor abandoned the job and sued to recover a balance claimed to be due for the work done to date. The trial judge awarded judgment in favor of the contractor but the Supreme Court reversed, saying:

Court Decision

"The question then is how much was to be paid when the first 100 feet were drilled, for the contract clearly states that the balance was to be paid when the work was completed. Now, either the contract means that one-third of the whole contract price was to be paid at that time, or that only one-third of the price of the 100 feet completed should be paid. As it seems unreasonable to believe that the parties intended that one-third of the whole price of work, which was to be paid for by the foot, and the amount of which could not be determined until completed, should be paid at the time that only one-third of it was completed, and when it could not be told how much the whole would amount to, we are forced to the conclusion that only one-third of the work which was completed at that time was to be paid for, and it follows, from the plain language of the contract, that the balance was not due until the well was completed." (Ferguson vs. Little, 74 Ark. 24, 84 S. W. 794.)

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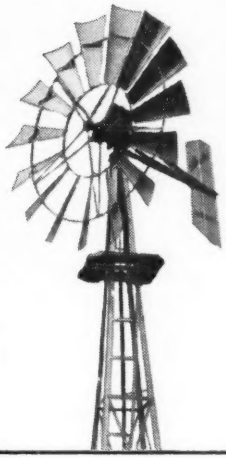

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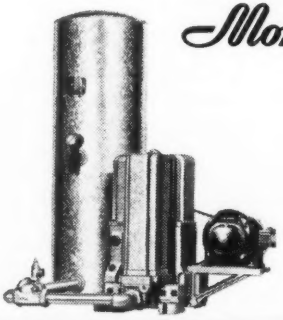
Today, windmills are the key to more profits and better management of pastures and range lands. With MONITOR windmills, your sales opportunity reaches from the "back forty" on general farms, to dozens of new wells on a single ranch. MONITOR mills are easy to sell and keep sold. Let us show you why.



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Plenty of running water whenever it's needed—that's a long-time investment in good living and farming. Only the best is good enough when you're selling water systems. Let us show you the MONITOR, precision engineered for quiet, constant service. You can see and hear the difference.

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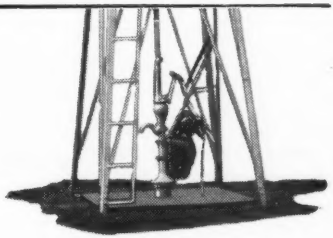

YOU GET MORE WITH MONITOR • LET US SHOW YOU WHY

BAKER MFG. COMPANY • EVANSVILLE, WIS.

Conservationists . . .

(Continued from page 10)

leadership in the fight to retain control of the Gulf tidelands.

Another resolution asked Congress to provide ample funds for general investigations of river basins and reclamation projects by the U. S. Bureau of Reclamation. The Texas Legislature was asked to supply the State Board of Water Engineers with sufficient funds for its administrative work.

The association commended development and progress of soil conservation districts. Also, the Army Engineers Corps was commended for its water resources development work.

Guy C. Jackson of Anahuac was reelected president of the association and J. E. Sturrock was continued as general manager.

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Well Troubles . . .

(Continued from page 9)

up and discoloration of the water in the hole below. It was also logical to believe the worst stir-ups occurred when the water was pumped to the low point in the well proper, because this made a down-flow of the slush through the holes in the casing inevitable. As long as the water surface was at a high peak in the well proper, there was no down-flow of the slush, and so little in-flow (horizontally) that it did not cause noticeable stirring up or discoloration. The trouble, of course, was remedied by the use of new casing.

In another case, however, I found a small stone lodged in the foot valve, causing it to be constantly unseated. Obviously, under such conditions, the pump was bound to furnish a diminished amount of water, compared with normal, and remain unprimed. I find that foot valves usually wedge the rubber packing when fitted in tight enough to avoid

leaking at that point. My worst trouble with such valves has been experienced in pulling them out after a long "setting" when a little sand has settled between the packing and the pipe.

Method for Pulling Valve

However, I have never failed to pull one by the following method: First I cut a V-shaped notch in the end of a two-by-four. Then I remove the pump handle, putting the bolt back in the hole in the pump rod. Next I place the V-notch around the rod and under the bolt, using the two-by-four as a lever. It may be necessary to use the largest bolt the hole in the pump rod will take in order to avoid bending the bolt in case the foot valve is stuck unusually tight. I have never seen this method fail, although sand cuts are often present in the rubber packing after the foot valve has been pulled.

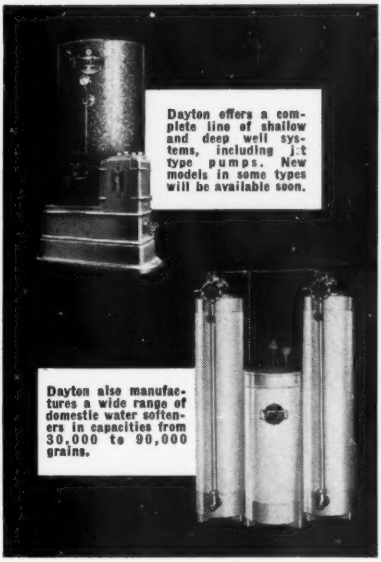
Casing May Leak

Stirring up can also be caused by the improper setting of casing, even on a new job. If insufficiently driven into the rock, the casing may leak at the lower end. Also, if an attempt is made to set casing in a stony formation—that is by driving alone—a leak may occur even after considerable driving, due to large or small stones preventing the end of the casing from penetrating the earth properly and producing a water-tight joint. Leaky casing trouble is often aggravated by long spells of rainy weather when seep water raises the level of the slush outside of leaky casing.

Another cause of stirring up water in wells is leaky pump pipe. The leak may be caused by a rusting through of the pipe, by holes worn in the pipe by a crooked pump rod, or by pump rod joints that are out of line. Leaky foot valves may cause

Thank You,

MR. DAYTON PUMP MERCHANDISER!


Dayton offers a complete line of shallow and deep well systems, including jet type pumps. New models in some types will be available soon.
Dayton also manufactures a wide range of domestic water softeners in capacities from 30,000 to 90,000 grains.

Much of the success we have had this year at Dayton Pump is due to you. We want wholeheartedly to thank you for this splendid help—to assure you that 1949 will find us with bigger and better means to make your job easier. Prominent among these will be the availability of new models together with an aggressive, up-to-the-minute advertising and merchandising program—to help you promote them.

Thanks again and the season's greetings to you and yours.

Dayton

Water Systems & Softeners

THE DAYTON PUMP & MFG. CO., DAYTON, OHIO

stirring up, and a poorly gasketed cylinder may let enough water pass to produce a slight stirring up of the water below. In many of these cases, however, the pump becomes partially or totally unprimed, and the pump pipe is emptied of water (after standing idle long enough) down to where the hole or leak is located, whether it be high or low. When a pump is found unprimed, you should check the pump thoroughly before turning attention to the casing on the suspicion of leakage. One should not go to the trouble of pulling casing until the hole has been thoroughly cleaned, the pump put in order, and the well pumped and given a reasonable period of time to clear up.

I am inclined to discount the theory advanced by some that unsettled weather—I do not mean rainy weather in this case—can cause a well to stir up. The cause, I believe, usually exists in the well proper, in the casing, or in the pumping equipment.

Long Island . . .

(Continued from page 7)

returned water. Unclogging the wells calls for an acidizing job, which the Lauman drillers readily handle. Their usual custom is to pump a mixture of 20% Muriatic acid into the well and let it remain overnight. In the majority of cases, when the well is pumped the next day, it has been freed of the plug.

Because the increased activity in home-building has been nation wide, it comes as no great surprise to find the Long Island firm playing a large role in supplying water for new construction. The Laumans are presently handling the water supply for a large housing development being constructed on Long Island. Known as Levittown, the housing development is a mile south of Hicksville. Plans call for some 8,000 houses to be constructed on the tracts, and the Lauman drillers are being depended upon to furnish 800 Gpm. for every 2,000 houses. Natural gravel packed wells, 12 inches in diameter and averaging 80 to 90 feet in depth, are being put down. Johnston deep well turbines have been installed on the completed wells. Layout of the water system is designed to include wells for a business district which will spring up in the development area upon the completion of the residences.

Willing to Cooperate

The willingness of the company to cooperate with housing officials illustrates the firm's "public consciousness." During the last war, one hundred per cent of Lauman's work was done for the government. Wells were drilled for army and navy camps, arsenals, airports, and defense plants. For the Grumman air plant, located on Long Island, the Lauman drillers installed an entire water system. They put in a battery of thirteen wells which averaged 800 Gpm. and 150 to 200 feet in depth, although one went down as far as 300 feet. All the wells were 12 by 20 double casing. As many as four Lauman rigs worked on the job when operations were proceeding.

Besides drilling water wells, the firm has put down holes for bridge and elevator pilings, drilled wells for dewatering a drydock in the Portsmouth Navy Yards, and, in cooperation with the USGS, has put down holes for atomic research in radiation and electrical grounding. They have also done test drilling for geological and hydrological data.

A good deal of Lauman's work concerns the development of wells. Generally, the firm uses three methods in developing wells: solid block

When your customer's well presents unusually tough pumping problems, don't say "no"— recommend Jacuzzi. For shallow wells or for depths to 600 feet, Jacuzzi offers a complete line of injector pumps. They're backed by national advertising that is making Jacuzzi stand for "Automatic Water" everywhere. With performance that is easy to sell, Jacuzzi Pumps will keep on selling *you* through long years of efficient, economical, dependable service.

The Jacuzzi Line includes pumps for domestic, industrial, irrigation use... electric motor, gasoline engine or belt driven... a pump for every purse and purpose. Write us for further information and name of nearest Jacuzzi distributor.

JACUZZI BROS. Inc.
RICHMOND, CALIFORNIA
PLANT ALSO AT ST. LOUIS, MO.

Jacuzzi
PUMPS & WATER SYSTEMS

ORIGINATORS OF INJECTOR TYPE PUMPS

surging, a combination of block surging and pumping, and surging by pump and compressed air. In the solid block treatment, a plunger is lifted and dropped in the well by means of the regular drilling motion. The combination method consists of surging with water at the same time the block is being used as a plunger. Sometimes, only surging is needed. This is done by starting and stopping the pump, which forces the water in and out of the water-bearing strata. In air development, air is blown down into the well where it mixes with the water, making that portion of the water lighter and forcing it to the top. The increasing and decreasing of air injected into the well provides a surging action. All natural gravel-packed wells in the Long Island vicinity have to be developed by one or a combination of these methods to insure peak production.

NEW CABLE TOOLS

Surplus
Long as they Last
First Come First Served

15 only casing spears, Fox Trip 4 slip — Acme with pulldown for 8" I.D. casing .....$150 ea.

10 only spuds for 6" hole, 8' long .....$ 50 ea.

10 only spuds for 8" hole, 8' long .....$ 60 ea.

All joints on these tools are 2x3-7 A.P.I. Prices are f.o.b. Los Angeles, plus applicable sales taxes.

Drilling & Mining Equipment Co.
2020 Sacramento St.
Los Angeles 21, Calif.
Phone Trinity 3401

Like other drilling firms, the Laumans sometimes have to learn their lessons by experience. However, they are glad to pass on a word of caution in connection with air devolopment that may prove helpful to other readers of THE DRILLER. Upon the completion of a 12-inch well drilled to a depth of 470 feet for a Long Island light company, 40 feet of screen was lowered to the bottom of the hole. Because the well had to be developed, an air hose was put down to the bottom of the well and 300 pounds of pressure turned on full blast. This proved to be the thing *NOT* to do. The sudden unbalancing of the pressure in the well collapsed the entire screen, losing $1500 worth of screen for the company. From then on, Lauman drillers have been careful to start surging operations at lower pressures.

Install Swimming Pools

A rather unusual Lauman specialty is the installation of fresh and salt water swimming pools. Although the actual pool construction is subcontracted, Lauman engineers lay out the systems and Lauman drillers provide the water. The company has pioneered in the field of salt water pool installation and has perfected a system of vertical and horizontal wells that are installed in the sand underlying the beach. Their construction allows the water to filter through the sand before it is pumped into the pool. Putting down a well of this type requires that the men, clad in swimming trunks, go out on the beach during low tide and jet down the wells. The wells range from four to twelve inches in diameter and rarely go deeper than ten feet.

The Long Island firm is proud of its reputation of being able to produce water where other companies have failed. In one instance, the

company, being familiar with the underground formations of a locality, guaranteed water to the owner of a small liquor store. The well started out as an ordinary four incher, but before much headway was made, a layer of boulders was encountered. After making four or five new starts in an attempt to evade the boulder strata, the Lauman drillers threw up their hands and decided to do it the hard way—they hand dug a 30-inch hole down to a depth of 90 feet, digging the rocks out by hand until they were through the boulder strata! Although the company "took a beating" on this job, their reputation for getting water under adverse conditions was maintained.

Work All Year

As one might surmise from the company's pride in keeping their escutcheon unblemished, the Lauman organization is progressive, wide-awake, and energetic. Their wells have ranged from an inch and a quarter in diameter up to 72 inches; however, sixty inches is the largest diameter that they now handle. Besides President H. E. Lauman, other officers of the firm include Herbert J. Borghart, Vice-president; Frank J. Schwegler, Secretary; Harry C. Spielman, Assistant Treasurer.

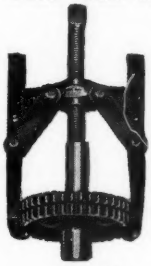
In addition to the firm's main plant located at Bethpage, Long Island, a New York office at 50 Church Street is also maintained. This New York sales and engineering office consists of fourteen people and includes engineers, draftsmen, and clerical workers. The sixteen office employees at the main plant are headed by Chief Engineer Fred Bensin. Year round employment is provided for 40 to 55 men, including drillers, helpers, mechanics, pump installers and servicers, and a six-man shop crew. All maintenance work for pumps and rigs is done by the shop men.

The Lauman drillers work all year round, although sub-zero temperatures during the winter sometimes force them to shorten their work hours. Naturally, because of the large territory they cover, the drillers must "live out" while on distant locations. However, those who are within a hundred mile radius of their homes are permitted to visit their families on weekends.

The firm depends upon their sales force to make many of the contacts for well jobs, although they do some newspaper advertising. They also have issued a professional looking booklet, illustrating the various well services they offer, and have mailed it to hundreds of prospective customers.

SURPLUS STOCK SALE!

7 Brand New
Gear and Wheel Pullers



Popular Size
Model No. 1004.

The harder the pull, the tighter the arms hug the work. Made of heavy one-piece forged steel yoke. Heat treated forged steel arms and straps. Will take gears, wheels, etc., up to 18" in diameter.

Diameter .....18"
Reach .....15½"
Diameter, Screw .....1¼"
Length, Screw .....16"
Hole adjustment .....3 hole
Weight .....40 lbs.

Bargain Price $22 ea. F.O.B. South Milwaukee

Bucyrus-Erie Co.
South Milwaukee, Wis.

FROM THE MAILBAG

This page is open to any of our readers having questions to ask relating to drilling, driving pipe, dressing bits, etc. All letters will be answered promptly by experienced drillers and engineers who are qualified to give intelligent advice on these subjects. We will publish as many letters of general interest as space will permit. Address: The Driller, South Milwaukee, Wis.

Driller In West Africa Tells Of Work

Dear Sir:

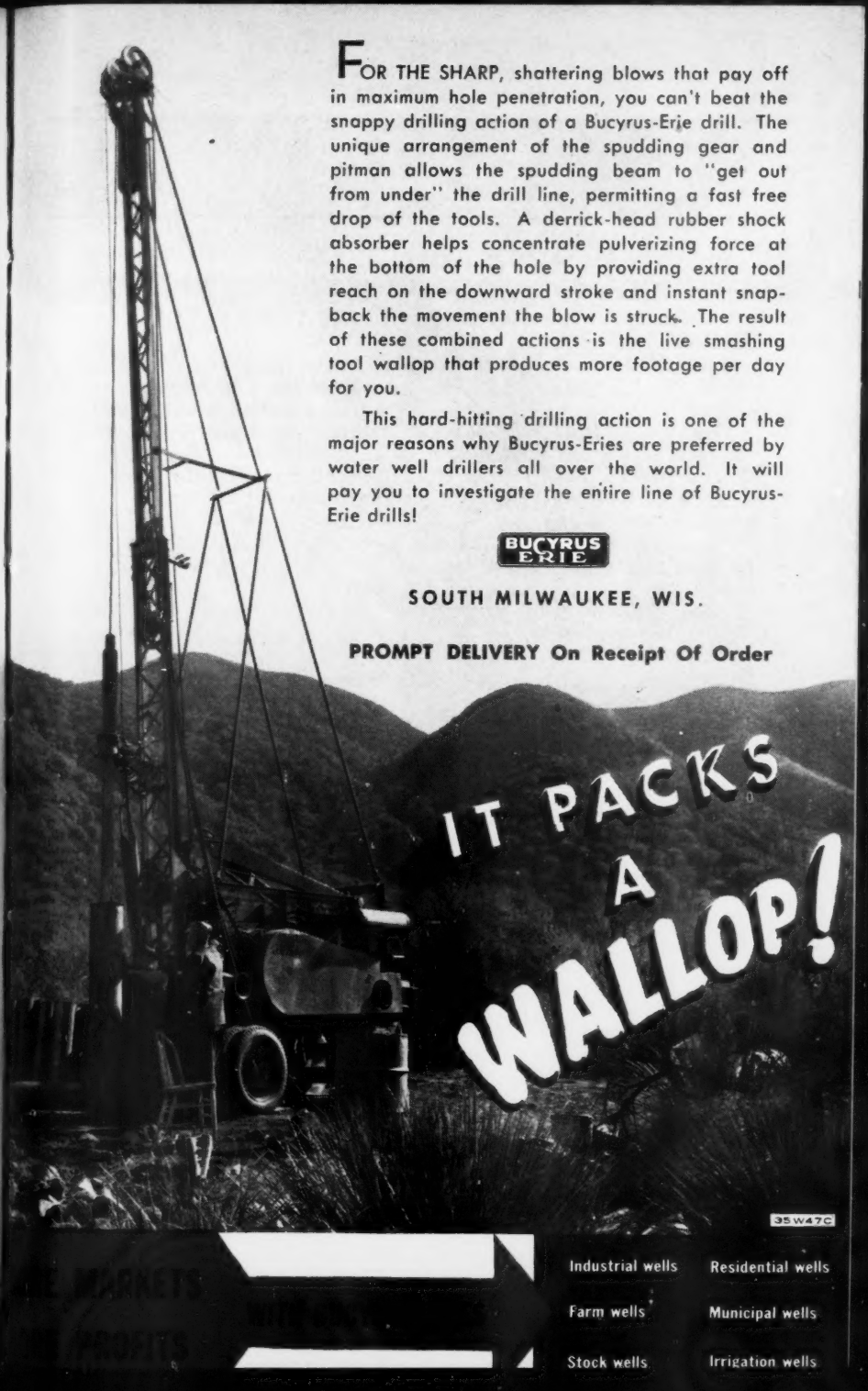
You are very well organized in well drilling in America, with all your drillers associations, etc. In Britain hardly anyone knows what a driller is. My rig is a 22-W Ruston-Bucyrus, something similar to the American Bucyrus-Erie, I believe, and at present I am on a 600-foot test hole for the Geological Survey Office. Hole sizes are as follows: 10″ to 150 feet, 8″ to 360 feet, and the rest 6″. At the moment I'm down 380, and from about 150 feet I've had to surge the casing through sand, having encountered neither clay nor any hard strata at all. We did come across a limited supply of water, in the sand, at 217 feet, but it's hardly suitable for the purpose desired.

The climate is very humid here, our worst enemy being the mosquito. I work 6 a. m. to 2 p. m. daily, with a crew of five Africans. At the present time we are in the midst of the rainy season, and we get terrific downpours with thunder and lightning so severe one almost could believe the war was still on. I am enclosing a photo of the rig soon after I started the well. I have had the machinery covered over as much as possible so that the rains don't delay us, but the water makes an awful mess of the ground 'round about.

I remain
Yours respectfully
W. E. Ebbatson
Nigeria, West Africa.

Association Paper

THE first issue of the "North Carolina Well Driller," a monthly bulletin sponsored by the association, was mailed recently to all members and associate members. Containing a complete listing of members, plus news of the organization, the bulletin provided interesting reading.



FOR THE SHARP, shattering blows that pay off in maximum hole penetration, you can't beat the snappy drilling action of a Bucyrus-Erie drill. The unique arrangement of the spudding gear and pitman allows the spudding beam to "get out from under" the drill line, permitting a fast free drop of the tools. A derrick-head rubber shock absorber helps concentrate pulverizing force at the bottom of the hole by providing extra tool reach on the downward stroke and instant snap-back the movement the blow is struck. The result of these combined actions is the live smashing tool wallop that produces more footage per day for you.

This hard-hitting drilling action is one of the major reasons why Bucyrus-Eries are preferred by water well drillers all over the world. It will pay you to investigate the entire line of Bucyrus-Erie drills!

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PROMPT DELIVERY On Receipt Of Order

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Industrial wells | Residential wells

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WIT BITS

Woman: "Son, can you direct me to the savings bank?"

Boy: "Yessum, for a quarter."

Woman: "Isn't that mighty high pay, my boy?"

Boy: "Not for a bank director, Missus."

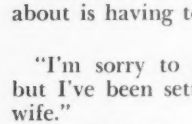
First Wife: "Does your husband complain about his meals?"

Second Wife: "No. What he kicks about is having to make them."

"I'm sorry to keep you waiting, but I've been setting a trap for my wife."

"Good heavens, man, that's bad. Whom do you suspect?"

"A mouse in the kitchen."



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MYERS *Ejecto* and Plunger Type Water Systems for every need

THE F. E. MYERS & BRO. CO.
Dept. P-30
Ashland, Ohio

Suspicious Parent: "Are you sure that knife you found was lost?"

Little Boy: "Sure. I saw the man looking for it."

One of those very talkative women buttonholed a fisherman who was minding his own business and said, "Aren't you ashamed of yourself? A great big fellow like you might be better occupied than in cruelly catching this poor little fish."

"Maybe you are right," said the fisherman. "But if this fish had kept his mouth shut, he wouldn't be here."

He: "I know a man who has been married forty years and spends every evening at home."

She: "That's what I call love."

He: "The doctor calls it paralysis."

"Now, then, what should a polite little boy say to a lady who has given him a nickel for carrying her suitcases?"

"Lady, I'm too polite to say it."

"Madame, I'm the piano mover."

"But I didn't send for a piano mover."

"I know it, lady. The neighbors did."

Little Allen had been using swear words and his mother packed his toy suitcase and told him to march on. The child was sitting on the steps, pondering his situation, when a neighbor approached. "Is your mother in?" she queried.

"Damned if I know," replied little Allen, "I don't live here."

All advertising in this section is payable in advance. Enclose your check or money order with copy. Rate: 30c per line. Minimum charge $1.20. No discounts; no commissions. Count your own copy to avoid delay. The average line contains 28 characters (20 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number if blind advertisement is desired. Closing date—10th of preceding month. Example — January issue closes December 10th. Be sure to address separate inquiries to each advertiser by using the correct box numbers. Mail Box inquiries care of THE DRILLER, South Milwaukee, Wis.

DRILLS FOR SALE

Almost new Ideco 10 drilling machine mounted on '36 Ford truck with tools and cables, ready to go. Has drilled only 400'. Am unable to operate. Price $2900. Jasper Newlin, Route 6, Newton, Ill.

Bucyrus-Erie 21-W with complete set of 4 inch and 6 inch tools. Will sell cheap. For full information and price write Bailey & Storms, Kempton, Ind.

All steel drilling machine mounted on '34 Chevrolet truck, powered by Model 247 PH Buda motor, V belt drive for 500 ft. drilling with ¾ drill line and ⅝ sand line, equipped with tools, wrenches, a set of jars, 2x3, 7 thread joint, three ¾ ft. x 16 ft. stem, one wire line socket, one boiler, two 4⅞ bits and two 6" bits, one earth socket, 1 chain bar tool tightener, priced for quick sale—$2,800. Box 277

DRILLS FOR SALE

1—Bucyrus-Erie 22-W spudder, new in 1947 equipped with casing reel, rubber-mounted sheaves and line spooler.

1—Bucyrus-Erie 24-L spudder, new, drilled one well. Gasoline or natural gas, 48' derrick with or without casing strut, tool crane, stem guide.

1—Bucyrus-Erie 21-W spudder, new in late 1947 without truck or tools, preferably. Box 279

Model 33-W with Waukesha engine, including cat heads, no casing reel, mounted on International 1½ ton Model '35 truck. Machine and truck in first-class condition. No tools. Price $3,000. Art Vaughn, 2314 E. Oak Street, Phoenix, Arizona.

21-W Bucyrus-Erie water well drill. New in August 1948, mounted on 1½ ton 1936 Federal truck. Truck overhauled and in good condition. Drill like new. Price $3,200.

22-W Bucyrus-Erie water well drill. Complete with catheads, casing reel and tool guide. Mounted on 3-ton 1933 Dodge truck. Truck recently overhauled and in good condition and equipped with power winch. Drill purchased new February 1948. Price complete $4,800. E. D. Underwood, Box 26, Clovis, California.

One Loomis K2 steel mounted on Model A truck with some tools. One Star 34 steel and wood spudder mounted on Ford V-8, some tools. Both in good running order. No reasonable offer refused. Jones & Downey Garage, Aurora, Ind.

SHUR-HIT drilling machine 200 hrs. of drilling. Will sacrifice. 7000'-¾" galv., 1500'-1¼" galv., 1200'-8" used drive pipe, 1500'-1" galv. Three Way Pipe Co., Box 5, Linwood Station, Detroit 6, Mich.

DRILLS FOR SALE

New Ideco No. 16. Equipped with electric starter and forge blower. For sale or will trade for used Bucyrus-Erie 22-W similarly equipped. Box 278

Keystone 1½ mounted on solid tire White truck. Machine and truck in good condition. With or without tools. John McIntosh, Rhinebeck, New York.

1—Bucyrus-Erie 33-W truck mounted, in good condition. Machine powered by International U2. Hoeg & Ames, Lincoln, Iowa.

No. 35 Armstrong, trailer-mounted, drilling machine, in good condition. Motor just overhauled. Machine equipped with 300' of new manila drilling line and 2 rope sockets. Will also include extra band wheel, jack shaft, and other spare parts. Located in New England. A real buy. Box 275

For Sale: Bucyrus-Erie Model 21W drill mounted on 2-ton Dodge truck complete with 400' of drilling cable and sand line and new string of 6" tools. Engine just overhauled and machine in first-class condition. Box 269

Model 35 Armstrong, wire line machine with Bucyrus-Erie rubber shock absorber. Complete with 6" tools, 8" bit, 500' of ¾" drilling line and 500' of ⅝" sand line. Machine in good condition. Located in New England. Box 273

Speed Star No. 71 mounted on 1938 two-ton International truck. Less tools and cable, $2500. Can furnish tools and cable if desired. Machine in first-class condition. Located in South Carolina. Box 263

(continued on page 30)

DRILLS FOR SALE

(continued from page 29)

Bucyrus-Erie 24-W drill mounted on 2½ ton Brockway truck. Truck and machine recently overhauled and in first class condition. Equipped with rubber cushioned sheaves, tool guide, blower, and power derrick hoist. Will sell with or without tools. Located Eastern New York. This machine previously reported sold. Box 254

Bucyrus-Armstrong 26-W drill with Buda HP-217 four-cylinder gasoline engine, in good condition. Will sell machine with or without tools. Box 267

Bucyrus-Erie 24-W mounted on 2-ton International truck. Drill just overhauled in excellent shape; can be seen in operation. W. E. Wyse, 231 North Street, Allegan, Michigan.

Model No. 1-½ all steel Keystone with wooden derrick and Bucyrus-Erie shock absorber. Mounted on 3-ton Stewart dual rear tired truck. First class condition. $1500. Tools and cable can be furnished if wanted. F. N. Hagmann, Jr., Vienna, Virginia.

DRILLS FOR SALE

Bucyrus-Erie 21-W drill, purchased new in 1947, mounted on Dodge '35 truck. Machine equipped with cat heads. New cables 500'⅝"; 500'⅜". No drilling tools. Price complete $3500. Located northern Wisconsin. Box 270

Bucyrus-Erie 33-W drill mounted on 5-ton Mack truck with tool guide, 600' of drilling cable and sand line and 6" drilling tools. Machine in good condition. Engine just overhauled. Will sell with or without truck and tools. Box 268

1947 Model Keystone 50 drill, mounted on 1947 two-ton Ford truck with two-speed rear end. Also 1948 Model Keystone 50 mounted on 1947 two-ton Ford truck with two-speed rear end. Both machines in excellent condition. Will sell machines with or without tools and trucks. Located Eastern Pennsylvania. Box 264

Failing 1500 rotary rig. Rig was new last spring, has 38' mast, 28'x2-⅞" Kelley. 4-½x6" mud pump, friction clutch, sand line drum. Mounted on KBS-7 International truck. 1000 gallon water tank mounted on 1-½ Chev. truck. Box 271

MISC. FOR SALE

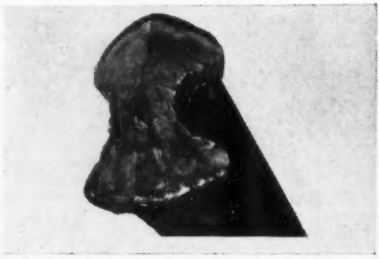
One doubledrum skidmount pipe pulling winch. 4000' ¾" line capacity. Jerkline and cat head attachment. White motor powered. One 1943 GMC six-by-six truck equipped with winch. All in A-1 condition. Biehl Producing Co., 108 Seventh St., Marietta, O. Phone 1075M.

Turbine pumps—20 and 25 HP 220/440 volt—8" column. Water lubricated 700 GPM at 92' total head. Regular price. New. One, 1000 GPM—90' 30 HP. American Drilling Company, Fair Haven, New Jersey.

One almost new Burton Shur-Hit. Drilled only 200 hrs. $1495. Almost all sizes pipe in limited quantities from ¾" to 6", both black and galv. Also larger pipe up to 12" in black only and 1" drill rod for hollow rod drillers. Wire line rope, rope sockets, stems, jars, bits, bailers, fishing tools, drive points, screens, etc. Gas, Oil & Water Supply Co., 13185 Ohio Ave., Detroit 4, Mich. Phone WEbster 3-5545.

Hard Surfacing Rod Available To Trade

EXTENDING its line of hard facing electrodes, the Lincoln Electric Co, Cleveland, Ohio, announces a new electrode of the coated tubular type for depositing super-abrasion resisting surfaces of weld metal. Called Tungweld-C, the electrode is light coated and contains in the tube coarse particles of tungsten carbide which are deposited by the arc and held in a tough iron alloy matrix, the company states. When the edge of the deposit is subjected to abrasive wear, the iron alloy and the base metal wear away exposing the tungsten carbide particles and producing a self-sharpening edge.



According to the company, a churn bit that was surfaced with the new electrode drilled through sand, shale and gravel many times further than bits that had not been hard faced in this manner.

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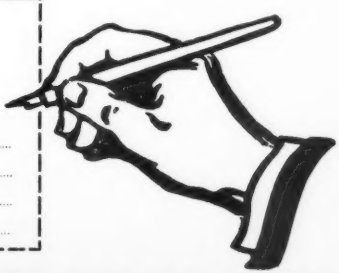

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THE COMPLETE LINE

PUMPS AND WATER SYSTEMS

December, 1948

Solving Tough Problems Boosts Long Island Firm 4

Starting some 30 years ago with a "piece of pipe and a wrench," C. W. Lauman & Co., Inc., Hicksville Road, Bethpage, L. I., by dint of hard-hitting practical business methods has grown into one of the outstanding water supply corporations in the East.

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Readers will find this driller's recounting of his experiences with pump problems both interesting and informative.

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